LOGGED
FEB
1969

PROGRESS REPORT NO. 3

COLOR IMAGE ASSESSMENT

PROJECT 6619

Period: January 1 through January 31, 1969

Declass Review by NIMA/DOD

PROGRESS DURING THE PERIOD

STATINTL

Work has proceeded on the running of actual data through the [   ] Tape Translate program and through the ensemble averaging program. The ensemble averaging program performs satisfactorily; program documentation is nearly complete for the ensemble averaging program and will be sent to the customer with a Fortran listing and example program output.

Tapes 00546 and 00547 have been decoded and run through the ensemble averaging program. These tapes contained the analytical micro-step wedges for SO-121, SO-151, 8443, SO-155 and 8442 scanned with a 1 x 80 micron slit. The resulting step wedge averages were plotted with minor density as a function of major density for each wedge and the slopes of the resulting linear relationships were entered in the absorption coefficient matrix for SO-121, SO-151 and 8443. The inverse of the three resulting matrices (one each for SO-151, SO-121, and 8442) were created, yielding the conversion matrices for generating analytical filter microdensities from integral filter microdensities.

Examination of tapes 00493 and 00384 on which the desaturated wedges for SO-121 and SO-151 are recorded were examined. It was STATINTL found that one trace, RO S1, was missing from each film set. The omission was found to be an error on the part of [   ] since the written instructions told the operator to trace wedge RO H instead of RO S1 (there is no wedge RO H). Instructions were given to trace wedge RO S1 on SO-151 and SO-121 each on separate tapes and STATINTL send them to [   ] These tapes have not been received as yet.

An attempt to read tapes 00493 and 00383 (the SO-121 and 8443 desaturated wedges) indicated tape errors existed. No tape errors have been detected on tape 00384 containing the SO-151 desaturated wedges.

A call to the customer's facility yielded the information that they knew the problem existed, but a satisfactory tape dump could not be generated to diagnose the problem. Examination of a tape dump STATINTL generated at [   ] showed that the customer's digitizer was occasionally inserting extra characters in the middle of a trichromatic density word. This insertion occurred before the blue density, between the blue and green or green and red densities or between the two words comprising the green density. This tape dump, with appropriate explanation, was sent to the customer. An attempt is being made to read the bad tapes on which the desaturated SO-121 and 8443 wedges are recorded, by skipping any blocks in which a digital error occurs. However, at this time it appears that desaturated wedge sets 06DE121DSW4 and 11DE8443DSW3 must be retraced and digitized according to previous instructions.

In the process of using the ensemble averaging program, densities greater than 4.00 were encountered, especially in Dmax areas. Since neither the ensemble averaging program, nor the exposure table generator can handle densities greater than four, it was necessary to divide all incoming densities by two. This is the same as dividing the analytical density conversion matrix by a scalar quantity. This change in scaling is of no consequence, since the numbers which are digitally recoded are not densities but are arbitrary logarithmic numbers. Because of this, the microdensitometer must be used as a function generator and all output must be taken through the correct exposure tables. Thus, the use of a scaling factor on all incoming values is a trivial matter in terms of calibration, except that it allows the output to fit the computer program arrays.   STATINTL

On 17 January 1969, tape 00173 was received by [   ] on which the analytical micro step wedges of SO-121, SO-155, SO-151, 8442 and 8443 were recorded. These traces were performed using a 10 micron spot. This tape has not been read as yet. The data it contains is useful as it will allow the comparison of integral to analytical conversion matrices generated from slit traces to those generated with spot traces.

WORK PLANNED FOR NEXT PERIOD

Work during the coming month will be concentrated in checkout all programs associated with the complete exposure table generator and selection package. Work on the MTF portion of this program will be started by the generation of analytical edge targets.